CLAIMS

1. A process for producing shaped bodies, in particular cores, molds and feeders in foundry technology, which comprises the following steps:

a. Preparation of a composition comprising
   i. at least one phenolic resin in solid form,
   ii. at least one polyisocyanate, and
   iii. at least one refractory material,
   with the composition being prepared at a temperature which is below the melting point of the at least one phenolic resin;
b. Molding of the composition to form a shaped body;
c. Raising of the temperature of the composition to above the melting point of the at least one phenolic resin to cure the mixture.

2. The process as claimed in claim 1, wherein the at least one refractory material is firstly mixed with the phenolic resin, in particular the at least one refractory material is coated with the phenolic resin, to give a mixture of solid refractory material and phenolic resin from which the composition is subsequently prepared by addition of the at least one polyisocyanate.

3. The process as claimed in claim 1 or 2, wherein the molding to form a shaped body is carried out in a heated tool.

4. The process as claimed in any of the preceding claims, wherein the at least one refractory material is selected from the group consisting of silica sand, olivine, chromite sand, zircon sand, vermiculite, synthetic mold materials such as Cerabeads or microspheres.

5. The process as claimed in claim 4, wherein the

microspheres are configured as hollow microspheres, preferably hollow microspheres based on aluminum silicate, in particular hollow microspheres having a high aluminum oxide content of more than about 40% by weight, or a lower aluminum oxide content of less than about 40% by weight.

6. The process as claimed in any of the preceding claims, wherein the composition comprises exothermic constituents, in particular at least one oxidizable metal and an oxidant.

7. The process as claimed in any of the preceding claims, wherein the production of the shaped body is carried out without addition of a solvent.

8. The process as claimed in any of claims 1 to 6, wherein the at least one polyisocyanate is dissolved in a solvent, in particular an aromatic solvent or a fatty acid ester, in which the phenolic resin is preferably insoluble or sparingly soluble.

9. The process as claimed in any of the preceding claims, wherein the at least one polyisocyanate comprises an isocyanate having at least 2, in particular from 2 to 4, particularly preferably from 2 to 3, isocyanate groups per molecule.

10. The process as claimed in any of the preceding claims, characterized in that the at least one polyisocyanate is an aliphatic, cycloaliphatic and/or aromatic polyisocyanate which is preferably in liquid form at room temperature.

11. The process as claimed in any of the preceding claims, characterized in that the at least one polyisocyanate comprises or is an aromatic polyisocyanate, in particular diphenylmethane diisocyanate in admixture with its higher homologues

(polymeric MDI), in particular polymeric MDI having a functionality of from 2 to 4.

12. The process as claimed in any of the preceding claims, characterized in that the at least one phenolic resin comprises or is a novolak, with the melting point of the phenolic resin or novolak preferably being in the range from about 60 to 120°C, in particular from about 60 to 110°C, particularly preferably from about 60 to 100°C.

13. The process as claimed in any of the preceding claims, wherein curing is carried out at a temperature of from 150°C to 300°C, in particular from 170°C to 270°C, particularly preferably from 180°C to 250°C.

14. The process as claimed in any of the preceding claims, wherein curing is carried out without addition of a catalyst.

15. The process as claimed in any of claims 1 to 13, wherein a solid and/or liquid catalyst is added to the mixture to accelerate curing.

16. The process as claimed in any of the preceding claims, wherein a compound which lowers the melting point of the phenolic resin is added to the mixture.

17. A shaped body, in particular a core, mold or feeder for foundry technology, which is obtainable by a process as claimed in any of claims 1 to 16.

18. The shaped body as claimed in claim 17 which is free of solvents and/or gaseous catalysts.

19. A composition for producing shaped bodies, in particular cores, molds and feeders, comprising at least

a. a solid phenolic resin,

b. at least one polyisocyanate, and
c. at least one refractory material.

20. The composition as claimed in claim 19, characterized in that the refractory material comprises hollow microspheres, preferably hollow microspheres based on aluminum silicate, in particular hollow microspheres having a high aluminum oxide content of more than about 40% by weight, or a lower aluminum oxide content of from about 28 to 33% by weight.

21. The composition as claimed in claim 19 or 20, wherein no solvent for the at least one phenolic resin and/or no solvent for the at least one polyisocyanate is present, and in particular no solvent at all is present.

22. The composition as claimed in any of claims 19 to 21, wherein the at least one phenolic resin comprises or is a novolak, with the melting point of the phenolic resin or novolak preferably being in the range from about 60 to 120°C, in particular from about 60 to 110°C, particularly preferably from about 60 to 100°C.